

Customer No.: 31561
Docket No.: 7558-US-PA
Application No.: 10/064,916

Amendments To Claims

1. (currently amended) A multi-memory architecture with an externally accessible storage capacity known as a total memory capacity and a number of pins of the multi-memory architecture having the total memory capacity is known as a total pin number, wherein the total pin number comprises used and unused pins, the multi-memory architecture comprising: a first type non-volatile memory device having a first data storage capacity and a first predefined pin configuration having a first number of pins which is an actual number of used pins according to the first data storage capacity; and

a second type non-volatile memory device having a second data storage capacity and a second predefined pin configuration having a second number of pins which is an actual number of pins according to the second data storage capacity; wherein the first number of pins is greater than the second number of pins, and the total pin number of the multi-memory architecture is equal to the number of pins of the first type non-volatile memory device of the multi-memory architecture having the total memory capacity and the first type non-volatile memory device and the second type non-volatile memory device are disposed in the multi-memory architecture at the same time.

2. (previously amended) The multi-memory architecture of claim 1, wherein the total memory capacity is equal to the first data storage capacity plus the second data storage capacity.

3. (previously amended) The multi-memory architecture of claim 1, wherein the second type non-volatile memory device comprises a plurality of segments and each segment has

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a data storage capacity equal to the first data storage capacity; wherein storage space of the first type non-volatile memory device is used to replace one of the segments in the second type non-volatile memory device so that an access to the replaced segment is mapped to the storage space of the first type non-volatile memory device.

4. (currently amended) The multi-memory architecture of claim 3, wherein the segment in the second type non-volatile ~~second~~ memory device that is currently being replaced by the first type non-volatile memory device is used to replace any one of the segments in the second type non-volatile memory device other than the one currently being replaced by the first type non-volatile memory device.

5. (previously amended) The multi-memory architecture of claim 3, further comprising: at least one replacement segment in the second type non-volatile memory device, whose data storage capacity equals the data storage capacity of each segment in the second type non-volatile memory device, is used to replace any one of the segments in the second type non-volatile memory device other than the one being currently replaced by the first type non-volatile memory device.

6. (currently amended) The multi-memory architecture of claim 1, further comprising a replacement memory area, ~~whose with a data storage capacity equals the second data storage capacity, which is partitioned into a plurality of segments each being equal in data storage capacity to the first type non-volatile memory device; the replacement memory area is used to replace the second type non-volatile memory device so that when accessing data stored in the multi-memory architecture, the accessed data comprises data stored in segments in one of the~~

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~~second type non-volatile memory device and the replacement memory area other than segments replaced by the first type non-volatile memory device, and data stored in the first type non-volatile memory device~~ in the second type non-volatile memory device, whose data storage capacity equals the first type non-volatile memory device, is used to replace any one of the segments in the second type non-volatile memory device other than the one being currently replaced by the first type non-volatile memory device.

7. (currently amended) The multi-memory architecture of claim 6 5, wherein one of the at least one replacement segment ~~the a segment in the replacement memory area~~ that is currently being replaced by the first type non-volatile memory device, is used to replace any one of the segments in the replacement memory area other than the one currently being replaced by the first type non-volatile memory device.

8. (cancelled)

9. (cancelled)

10. (currently amended) A multi-memory architecture comprising:

a first type non-volatile memory device having a first data storage capacity; and
a second type non-volatile memory device having a second data storage capacity;

wherein the multi-memory architecture has the same overall pin configuration as the first memory device and the first type non-volatile memory device and the second type non-volatile memory device are disposed in the multi-memory architecture at the same time.

11. (previously amended) The multi-memory architecture of claim 10, wherein an externally-accessible total data storage capacity of the multi-memory architecture is equal to the

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first data storage capacity plus the second data storage capacity.

12. (previously amended) The multi-memory architecture of claim 10, wherein the second type non-volatile memory device includes a plurality of segments and each segment comprises a data storage capacity equal to the first data storage capacity; wherein storage space of the first type non-volatile memory device is used to replace one of the segments in the second type non-volatile memory device so that an access to the replaced segment is mapped to the storage space of the first type non-volatile memory device.

13. (previously amended) The multi-memory architecture of claim 12, wherein the segment in the second type non-volatile memory device that is currently being replaced by the first type non-volatile memory device is used to replace any one of the segments in the second type non-volatile memory device other than the one currently being replaced by the first type non-volatile memory device.

14. (currently amended) The multi-memory architecture of claim 12, further comprising: at least one replacement segment in the second type non-volatile memory device, wherein data storage capacity of the at least one replacement segment equals that of each segment in the second type non-volatile memory device and the at least one replacement segment can be used to replace any one of the segments in the second type non-volatile memory device other than the one being currently replaced by the first type non-volatile memory device.

15. (currently amended) The multi-memory architecture of claim 10, further comprising a replacement memory area, ~~whose data storage capacity of a replacement segment equals to the second data storage capacity, which is partitioned into a plurality of segments each~~

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~~being equal in data storage capacity to the first type non-volatile memory device; the replacement memory area is used to replace the second type non-volatile memory device so that when accessing data stored in the multi-memory architecture, the accessed data comprise data stored in segments in one of the second type non-volatile memory device and the replacement memory area other than segments replaced by the first type non-volatile memory device, and data stored in the first type non-volatile memory device~~ in the second type non-volatile memory device, whose data storage capacity equals the first type non-volatile memory device, is used to replace any one of the segments in the second type non-volatile memory device other than the one being currently replaced by the first type non-volatile memory device.

16. (currently amended) The multi-memory architecture of claim ~~15~~ 14, wherein one of the at least one replacement segment ~~the segment in the replacement memory area~~ that is currently being replaced by the first type non-volatile memory device, is used to replace any one of the segments in the replacement memory area other than the one currently being replaced by the first type non-volatile memory device.

17. (cancelled)

18. (cancelled)